

REMARKS

The Office Action mailed August 13, 2009, has been received and reviewed. Claims 1, 3 through 7, 9 through 13 and 15 through 21 are currently pending in the application. Claims 1, 3 through 7, 9 through 13 and 15 through 21 stand rejected. Applicants have amended claims 1 and 12, and respectfully request reconsideration of the application as amended herein.

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on U.S. Patent Publication No. 2005/0059162 to Wohleb in View of U.S. Patent Publication No. 2001/0053517 to Anton et al. and U.S. Patent No. 5,958,714 to Gordon et al.

Claims 1, 3 through 7, 9 through 13 and 15 through 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Wohleb (U.S. Patent Publication No. 2005/0059162) in view of Anton et al. (U.S. Patent Publication No. 2001/0053517) and Gordon et al. (U.S. Patent No. 5,958,714). Applicants respectfully traverse this rejection, as hereinafter set forth.

To establish a *prima facie* case of obviousness the prior art reference (or references when combined) **must teach or suggest all the claim limitations**. *In re Royka*, 490 F.2d 981, 985 (CCPA 1974); *see also* MPEP § 2143.03. Additionally, the Examiner must determine whether there is “an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1740-1741, 167 L.Ed.2d 705, 75 USLW 4289, 82 U.S.P.Q.2d 1385 (2007). Further, rejections on obviousness grounds “cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *Id* at 1741, quoting *In re Kahn*, 441, F.3d 977, 988 (Fed. Cir. 2006). Finally, to establish a *prima facie* case of obviousness there must be a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). Furthermore, the reason that would have prompted the combination and the reasonable expectation of success must be found in the prior art, common knowledge, or the nature of the problem itself, and not based on the Applicant’s disclosure. *DyStar Textilfarben GmbH & Co. Deutschland KG v. C. H. Patrick Co.*, 464 F.3d 1356, 1367 (Fed. Cir. 2006); MPEP § 2144. Underlying the obvious determination is the fact that statutorily

prohibited hindsight cannot be used. *KSR*, 127 S.Ct. at 1742; *DyStar*, 464 F.3d at 1367.

Applicants incorporate all of the arguments made in the previous Amendment.

Independent claim 1, as amended, recites a method for determining an amount of a sprout inhibiting chemical on a crop, comprising: providing an extraction solution for dissolving a sprout inhibiting chemical of a crop sample and a predetermined amount of an internal standard in a container; collecting a crop sample from the crop at a crop storage location; placing the crop sample in the container; transporting the container including the crop sample from the crop storage location to a chemical testing facility; quantitatively measuring an amount of the sprout inhibiting chemical in the extraction solution at the chemical testing facility; comparing the amount of internal standard present in the container at the chemical testing facility with the amount of internal standard placed in the container at the crop storage location to obtain a calibration ratio; calculating a surface area of the crop sample; dividing the calculated surface area of the crop sample by a total mass of the crop to obtain a crop surface area ratio; and multiplying the amount of sprout inhibiting chemical measured in the extraction solution, the crop surface area ratio, and the calibration ratio to determine the amount of sprout inhibitor present on the surface of the crop sample.

Independent claim 12 recites a method for analyzing a sprout inhibitor on a tuber comprising: collecting a tuber sample from the tuber at a potato storage facility; depositing the tuber sample into a container including an extraction solution; transporting the container including the tuber sample to a chemical testing facility; assaying the sprout inhibitor in the extraction solution at the chemical testing facility; placing a predetermined amount of an internal standard in the extraction solution; quantifying an amount of the internal standard in the extraction solution; comparing the quantified amount of the internal standard in the extraction solution in the container at the chemical testing facility with the predetermined amount of the internal standard placed in the extraction solution deposited in the container at the potato storage facility to obtain a calibration ratio; calculating a surface area of the tuber sample; dividing the calculated surface area of the tuber sample by a total mass of the tuber to obtain a tuber surface area ratio; and multiplying the amount of sprout inhibiting chemical measured in the extraction solution, the tuber surface area ratio, and the calibration ratio to determine the amount of sprout

inhibitor present on the surface of the crop sample.

Peck does not teach or suggest Peck calculating a surface area of the crop sample; dividing the calculated surface area of the crop sample by a total mass of the crop to obtain a crop surface area ratio, and multiplying the amount of sprout inhibiting chemical measured in the extraction solution, the crop surface area ratio, and the calibration ratio to determine the amount of sprout inhibitor present on the surface of the crop sample. Peck also does not teach or suggest transporting a container that includes the sample, extract solution, and internal standard from a first location to a chemical testing facility. Finally, as acknowledged by the Examiner, Peck does not teach or suggest use of an internal standard.

Anton et al. is relied upon as disclosing a kit for collecting and analyzing an unknown sample, the kit including a known quantity of an internal standard that is used to “spike” the sample when the sample is collected. However, Anton et al. relates to methods and compositions used to assay a nucleic acid burden in tissue or other body compartments, specifically, the determination of HIV viral infections by determining viral burden. However, Anton et al. does not overcome the previously described deficiencies of Peck. Additionally, Anton et al. teaches a method of using an internal standard that accounts for analyte lost in a method of determining a specific nucleic acid sequence in a biological sample obtained from a human or mammalian subject, which is substantially different from chemical analysis methods to determine and quantify the amount of a particular sprout inhibitor on a crop sample in order to determine the residue levels of sprout inhibitors on such crops, as required by the pending claims.

Finally, Guyot is relied upon as disclosing “that crops take up chemicals present in the soil” and “given that the method in Peck is directed towards the analysis of contaminants present in samples that are consumed by humans [i.e. soil, water and air ...], it would have been obvious . . . to collect tuber samples from a crop storage location and apply the test disclosed by Peck to determine the concentration of deleterious chemicals . . . in tuber samples.” (Office Action at pg. 4). However, Guyot does not overcome the deficiencies of Peck and Anton. Additionally, as discussed below, Guyot is drawn to methods for treatment of waste material in sewage plants and, as such, is entirely unrelated to the subject matter of the present invention and to the subject matter of Peck or Anton. Guyot is specifically drawn to analysis of contaminants, as opposed to

quantifying and calibrating the amount of a sprout inhibitor that is intentionally put on a crop for a useful purpose (sprout inhibition), as opposed to measuring contaminants in soil that may be taken up by crops, as suggested in the Office Action.

Claims 1 and 12 (and all of the claims depending therefrom) require the sample being tested to be a crop sample or a tuber. As acknowledged by the Examiner, Peck is drawn to analysis of toxic chemicals in soil. Anton is drawn to methods for determining the presence of a specific nucleic acid sequence (RNA and DNA) in a biological sample (mucosal tissue, skin tissue, lymph tissue, ocular tissue, pulmonary tissue, and liver tissue) to determine the burden of a virus (HIV and SIV) in a mammalian or human subject. (Anton at paras. [0006], [0008], and [0058]). Guyot is drawn to a method for treatment of waste materials such as city or animal sewage. Nutrients (e.g., phosphorous and nitrogen) in the waste materials are collected and measured to determine the amount of volume supplied to the plant and in order to avoid toxic materials from collecting in the soil. In contrast to the pending claims, none of the cited references teaches or suggests methods for assaying sprout inhibiting chemicals extracted from crop samples in the field along with an internal standard, and transporting the same to a chemical testing facility where the amount of a sprout inhibiting chemical is quantitatively measured and compared to the amount of internal standard present to obtain a calibration ratio and measurement of a sprout inhibiting chemical on the treated crop, tuber, or potato, at the chemical testing facility.

Additionally, there is no suggestion or motivation to combine Peck (analysis of toxic chemicals in soil), Anton (analysis of human/mammalian tissue samples to determine presence of a virus), and Guyot (treatment of waste materials in sewage plants), as the three references are drawn to entirely different industries and subject matter that are entirely unrelated to one another and, more significantly, entirely unrelated to methods for assaying sprout inhibiting chemicals extracted from crop samples in the field and tested/calibrated in a chemical testing facility to determine the levels of applied sprout inhibiting chemical residues on the treated crops, tubers or potatoes. With specific regard to combining Peck with Guyot, the fact that “crops take up chemicals present in the soil” does not create a motivation or suggestion to combine a patent drawn to testing of soil samples (Peck) with a patent drawn to treatment of sewage plant waste

material. Neither Peck nor Guyot teach, suggest, or even mention collection or analysis of crops or tubers, and don't relate to testing for residue of chemicals that were intentionally applied to crops or tubers. Therefore, Applicants respectfully disagree with the Examiner's unsupported conclusion that "given that the method in Peck is directed towards the analysis of contaminants present in samples that are consumed by humans [i.e. soil, water and air ...], it would have been obvious . . . to collect tuber samples from a crop storage location and apply the test disclosed by Peck to determine the concentration of deleterious chemicals . . . in tuber samples." As humans do not typically consume soil or waste materials from sewage plants, there is no connection with the testing methods disclosed in Peck or Guyot to teach or suggest the methods of the present invention. Additionally, since Anton is drawn to testing of mammalian/human tissue for presence of nucleic acids to determine virus burden, the combination of the three references likewise does not teach or suggest the methods of the present invention.

Furthermore, claims 1 and 12 (and all of the claims depending therefrom) compare the amount of internal standard present in the container at the chemical testing facility with the amount of internal standard placed in the container at the crop storage facility to obtain a calibration ratio. Therefore, the use of internal standard is entirely different from that allegedly taught in the cited references, as the present invention uses the internal standard to determine loss of chemical from the sample (tuber) that may directly result from the transport of the crop sample from the crop/potato storage facility to a chemical testing facility.

The nonobviousness of independent claims 1 and 12 precludes a rejection of claims 2-7, 9-11, 13, and 15-21 which depend therefrom because a dependent claim is obvious only if the independent claim from which it depends is obvious. *See In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also* MPEP § 2143.03. Therefore, the Applicants respectfully request that the Examiner withdraw the 35 U.S.C. § 103(a) obviousness rejection to claims 1-13 and 15-21.

ENTRY OF AMENDMENTS

The proposed amendments to claims 1 and 12 above should be entered by the Examiner because the amendments are supported by the as-filed specification and drawings and do not add any new matter to the application. Further, the amendments do not raise new issues or require a

further search. Finally, if the Examiner determines that the amendments do not place the application in condition for allowance, entry is respectfully requested upon filing of a Notice of Appeal herein.

CONCLUSION

Claims 1, 3-7, 9-13 and 15-21 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, the Examiner is respectfully invited to contact Applicants' undersigned attorney.

Respectfully submitted,



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Date: November 13, 2009
ERC/kso/lh
Document in ProLaw